

Appln. S/N 10/014,535
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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

- Claim 1 (currently amended) An encryption system comprising:
- a transmitting device for modulating a data signal ~~onto a piecewise continuous carrier signal~~ onto a noise signal having properties that are constant for a predetermined number of bits and change after the predetermined number of bits and for transmitting the modulated signal onto a transmission medium; and
 - a receiving device for receiving said transmitted signal from the transmission medium and for recovering the data signal by removing said ~~piecewise continuous carrier signal~~ noise signal.
- Claim 2 (currently amended) The system of claim 1 wherein said transmitting device further comprises:
- means to generate ~~a the piecewise continuous carrier signal~~ the noise signal;
 - modulating means to modulate the data signal onto the generated noise carrier signal ;
- and
- transmitting means to transmit said modulated signal over the transmission medium.
- Claim 3 (currently amended) The system of claim 2 wherein said receiving device further comprises:
- means to receive the transmitted signal;
 - means to generate ~~a piecewise continuous carrier~~ further noise signal; and
 - means to demodulate said received transmitted signal, using the generated ~~piecewise continuous carrier~~ further noise signal, to produce a data output signal.

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Claim 4 (currently amended) The system of claim 3 wherein the two ~~piecewise continuous-carrier~~ noise signals are identical in phase and frequency, thereby simplifying the demodulation of said data signal.

Claim 5 (currently amended) The system of claim 4 wherein the parameters defining the phase, amplitude and frequency of said ~~piecewise continuous-carrier~~ noise signals are determined in accordance with an output of a pseudo-random number generator seeded with a key, thereby increasing the difficulty of an intruder planning to intercept said transmitted signal.

Claim 6 (currently amended) The system of claim 5 wherein said pseudo-random number generator is identically implemented at both the transmitting and receiving devices and seeded with the same key so that parameters derived from each pseudo-random number generator are the same and result in the same ~~piecewise continuous-carrier~~ noise signal being generated at the transmitting and receiving devices, thereby ensuring correct decoding of said transmitted signal.

Claim 7 (currently amended) The system of claim 6 wherein the number of bits over which the properties of the noise signal are constant is variable, the length of each segment in the piecewise continuous-carrier signal is defined in length as a 'group of bits'.

Claim 8 (currently amended) The system of claim 7 wherein the number of bits ~~in each group of bits~~ over which the properties of the noise signal are constant is determined in accordance with an output of the pseudo-random number generator.

Claim 9 (canceled)

Claim 10 (currently amended) A method of encrypting data comprising the steps of:
generating ~~a piecewise continuous-carrier signal~~ a noise signal having properties that are constant for a predetermined number of bits and change after the predetermined number of bits;
modulating a data signal with the ~~piecewise continuous-carrier signal~~ noise signal ; and

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transmitting the modulated signal over a transmission medium.

Claim 11 (currently amended) The method of claim 10 wherein the ~~piecewise-continuous carrier~~ properties of the noise signal ~~is defined by parameters including a length of each continuous segment~~ include the number of bits over which the properties are constant, an amplitude, a phase and a frequency.

Claim 12 (currently amended) The method of claim 11 wherein each of the ~~parameters~~ properties is determined in accordance with an output of a pseudo-random number generator.

Claim 13 (currently amended) The method of claim 10 wherein the step of modulating the data signal ~~include~~ includes performing an amplitude modulation.

Claim 14 (currently amended) The method of claim 10 wherein the step of modulating the data signal ~~include~~ includes performing a frequency modulation.

Claim 15 (currently amended) The method of claim 10 wherein the step of modulating the data signal ~~include~~ includes performing a frequency shift keying modulation.

Claim 16 (currently amended) The method of claim 10 further including the steps of:
receiving the transmitted signal
generating a second ~~piecewise-continuous-carrier~~ noise signal; and
demodulating the received signal using the second ~~piecewise-continuous-carrier~~ noise signal to recover a data output signal.

Claim 17 (currently amended) The method of claim 16 wherein the ~~piecewise-continuous carrier~~ second noise signal is defined by the same parameters as the ~~piecewise-continuous carrier~~ noise signal.